

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended): A spatialization system ~~[[42]]~~ for at least one sound source creating for each source two spatialized monophonic channels (L, R) designed to be received by a listener, comprising:

~~[[1]]~~ a filter database ~~[[13]]~~ comprising a set of head-related transfer functions ~~(HRTF)~~ specific to the listener,

~~[[2]]~~ a data presentation processor ~~(CPU1)~~ receiving the information from each source and comprising in particular a module ~~[[101]]~~ for computing the relative positions of the sources in relation to the listener,

~~[[3]]~~ a unit ~~(CPU2)~~ for computing said monophonic channels by convolution of each sound source with head-related transfer functions of said database estimated at said source position,

~~the system being characterized in that~~ wherein said data presentation processor comprises a head-related transfer function selection module ~~[[102]]~~ with a variable resolution suited to the relative position of the source in relation to the listener.

2. (currently amended): The spatialization system as claimed in claim 1, ~~characterized in that~~ wherein the head-related transfer functions ~~(HRTF)~~ included in the database ~~[[13]]~~ are collected at 7° intervals in azimuth, from 0 to 360°, and at 10° intervals in elevation, from -70° to +90°.

3. (currently amended): The spatialization system as claimed in ~~either of claim[s] 1 or 2,~~ ~~characterized in that~~ wherein the number of coefficients of each head-related transfer function is approximately 40.

4. (currently amended): The spatialization system as claimed in ~~one of the preceding~~ claim[[s]] 1, ~~characterized in that~~ wherein it ~~comprises~~ comprising a sound database [[(14)]] ~~containing~~ including in digital form a monophonic sound signal characteristic of each source to be spatialized, this sound signal being designed to be convoluted with the selected head-related transfer functions.

5. (currently amended): The sound spatialization system as claimed in claim 4, ~~characterized in that~~ wherein the data presentation processor (~~CPU1~~) comprises a sound selection module [[(103)]] linked to the sound database [[(14)]] prioritizing between the concomitant sound sources to be spatialized.

6. (currently amended): The sound spatialization system as claimed in claim 5, ~~characterized in that~~ wherein the data presentation processor (~~CPU1~~) comprises a configuration and programming module [[(104)]] to which is linked the sound selection module [[(103)]] and in which are stored customization criteria specific to the listener.

7. (currently amended): The spatialization system as claimed in ~~one of the preceding~~ claim[[s]] 1, ~~characterized in that~~ wherein it comprises an input/output audio conditioning module [[(16)]] which retrieves at the output the spatialized monophonic channels (~~L, R~~) to format them before sending them to the listener.

8. (currently amended): The spatialization system as claimed in claim 7, ~~characterized in that~~ wherein since [""]live[""] communications have to be spatialized, these communications are formatted by the conditioning module [[(16)]] so they can be spatialized by the computation unit (~~CPU2~~).

9. (currently amended): The sound spatialization system as claimed in ~~one of the preceding~~ claim[[s]] 1, ~~characterized in that~~ wherein the computation unit (~~CPU2~~) comprises a

processor interface $[(203)]$ linked with the data presentation unit ~~(CPU1)~~ and a computer $[(202)]$ for generating spatialized monophonic channels ~~(L, R)~~.

10. (currently amended): The sound spatialization system as claimed in claim 9, ~~characterized in that~~ wherein since the system comprises a sound database $[(14)]$, the processor interface $[(203)]$ comprises buffer registers for the transfer functions from the filter database $[(13)]$ and the sounds from the sound database $[(14)]$.

11. (currently amended): The spatialization system as claimed in ~~either of claim~~ $[(s)]$ 9 ~~or 10~~, ~~characterized in that~~ wherein the computer $[(202)]$ is implemented by an EPLD type programmable component.

12. (currently amended): The spatialization system as claimed in ~~either of claim~~ $[(s)]$ 10 ~~or 11~~, ~~characterized in that~~ wherein the computer $[(202)]$ comprises a source activation and selection module $[(204)]$, performing the mixing function between $[""]$ live $[""]$ communications and the sounds from the sound database $[(14)]$.

13. (currently amended): The spatialization system as claimed in ~~one of claim~~ $[(s)]$ 9 ~~to 12~~, ~~characterized in that~~ wherein the computer $[(202)]$ comprises a dual spatialization module $[(205)]$ which receives the appropriate transfer functions and performs the convolution with the monophonic signal to be spatialized.

14. (currently amended): The spatialization system as claimed in ~~one of claim~~ $[(s)]$ 9 ~~to 13~~, ~~characterized in that~~ wherein the computer $[(202)]$ comprises a soft switching module $[(206)]$ implemented by a dual linear weighting ramp.

15. (currently amended): The spatialization system as claimed in ~~one of claim~~ $[(s)]$ 9 ~~to 14~~, ~~characterized in that~~ wherein the computer $[(202)]$ comprises an atmospheric absorption simulation module $[(208)]$.

16. (currently amended): The spatialization system as claimed in ~~one of~~ claim[[s]] 9 to 15, ~~characterized in that~~ wherein the computer [[[202)]] comprises a dynamic range weighting module [[[209)]] and a summation module [[[210)]] to obtain the weighted sum of the channels of each track and provide a single stereophonic signal compatible with the output dynamic range.

17. (currently amended): An integrated modular avionics system [[[40)]] comprising a high speed bus [[[41)]] to which is connected the sound spatialization system [[[42)]] as claimed in ~~one of the preceding~~ claim[[s]] 1 via the data presentation processor [[[CPU1)]]].

18. (new): The spatialization system as claimed in claim 11, wherein the computer comprises a source activation and selection module, performing the mixing function between live communications and the sounds from the sound database.

19. (new): The spatialization system as claimed in claim 10, wherein the computer comprises a dual spatialization module which receives the appropriate transfer functions and performs the convolution with the monophonic signal to be spatialized.

20. (new): The spatialization system as claimed in claim 10, wherein the computer comprises an atmospheric absorption simulation module.